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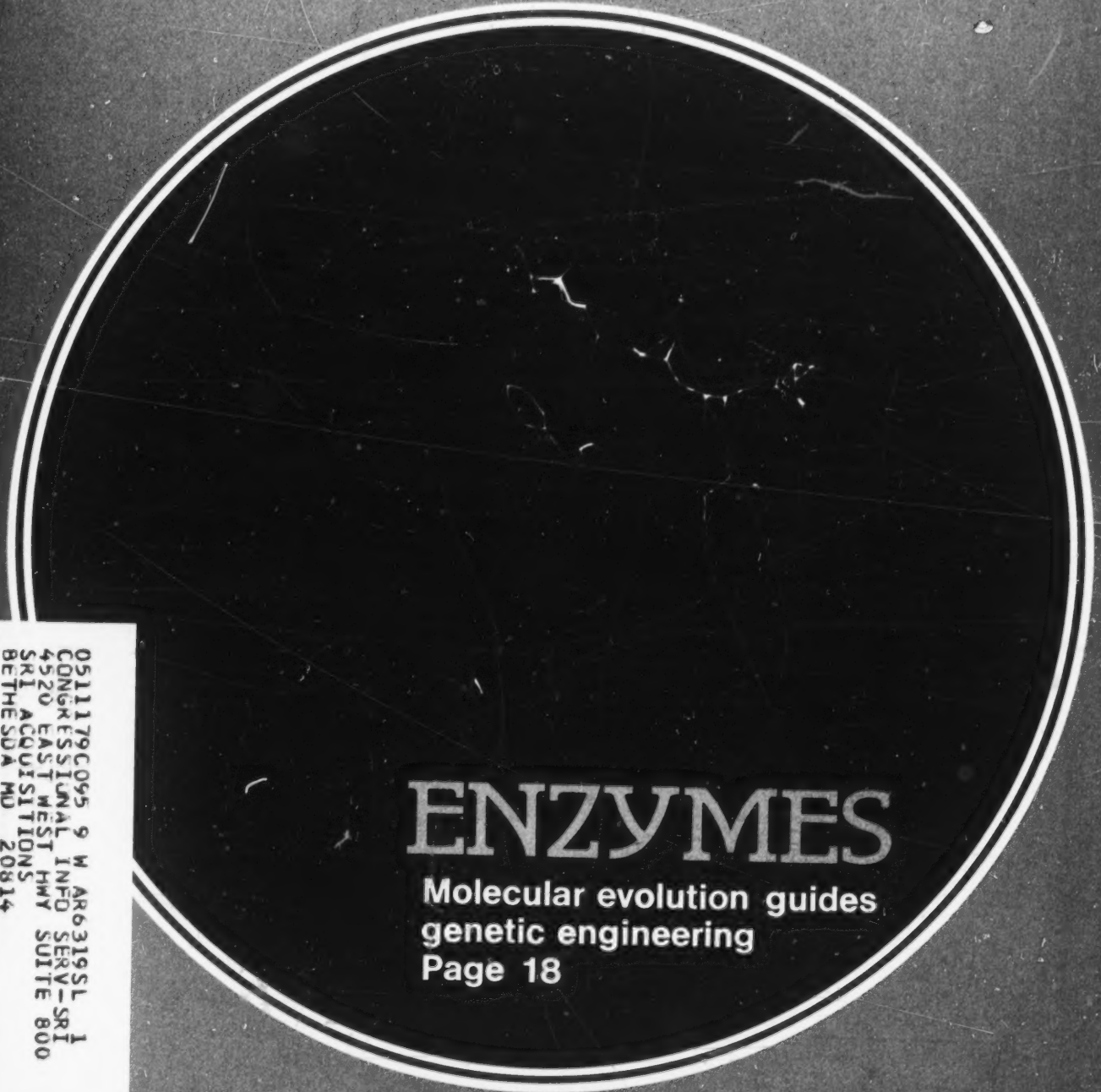
Chemical earnings tumble in first quarter Page 8

Scientific news from Miami Beach ACS meeting

MAY 13, 1985

CHEMICAL & ENGINEERING

NEWS



ENZYMES

Molecular evolution guides genetic engineering

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Cover: Ribonuclease, showing those amino acids that are altered by evolution to engineer the protein to be a dimer (green); those involved in adapting the enzyme to be stable enough to survive in the digestive tract (red); and those conserved to permit a defined folding pattern around a hydrophobic core (pink)

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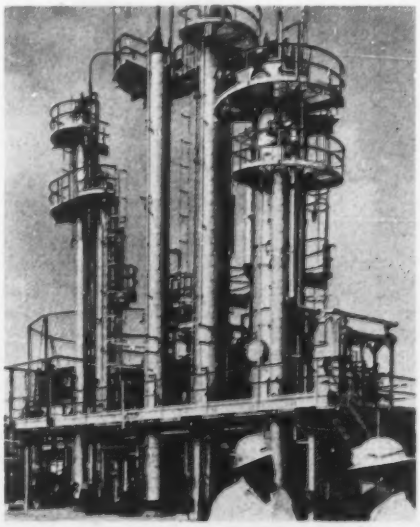


Business

Chemical earnings declined for basic chemical producers in the first quarter—a drop for the second straight quarter. **Page 8**

Chemical Earnings Fell Again in First Quarter

For second straight quarter basic chemical producers show drop from year-earlier period; chemical operations also hurt diversified, oil firms

David Webber, C&EN New York

This year's first quarter turned out to be a letdown for U.S. chemical producers. The dollar, rampaging through the exchange markets, wreaked havoc in chemical markets. Imports, pegged to lower-value foreign currency, swelled in volume, stealing domestic market share and unmanning price initiatives. Export markets turned a cold shoulder to dollar-based products. Many raw-material costs rose.

The result was a sharp decline in chemical earnings compared to last year's first quarter. For the 30 largest chemical producers, combined net income dropped 24% from a year earlier. The slump was even greater for the 15 largest firms (which account for 86% of total sales of the entire group); their combined net fell 28%. The smaller 15 companies posted a composite earnings decline of 3% in the quarter. Sales revenues fell 2% for the 15 biggest companies and were unchanged from a year before for the smaller 15.

Softening the harshness of this picture, it must be noted that the period's results are being compared to a very strong first-quarter 1984, the second-strongest three-month span for earnings since the chemical industry began its recovery in the second quarter of 1983. In addition, first-quarter performance when compared with that of the preceding quarter (fourth-quarter 1984) is mixed. Although sales for the group were down a fraction, net income increased 4%. The composite first-quarter 1985 profit margin (after-tax income as a percentage of sales), although down to 4.6% from 5.9% a year earlier, was up from 4.4% in fourth-quarter 1984.

Still, those comparisons do little to qualify the chemical industry's serious problems that cut across most product segments. "There has been no growth in the industrial sector of the economy since mid-1984, due largely to the abnormal strength of the dollar and the resultant increasing flood of imports, which are now affecting directly or indirectly almost every domestic manufacturing industry," says Edward G. Jefferson, Du Pont's board chairman. "We have seen the impact of the strong dollar on most of our business segments in the form of constrained volume plus price erosion in domestic and international markets."

In the first quarter, Du Pont's earnings, excluding extraordinary and nonrecurring items, were down 41% from the year-earlier period. Sales fell 11% during that time.

The pervasiveness of these problems can be seen, in that 21 of the 30 largest chemical companies reported declines in net income in the first quarter. Eleven of those were among the 15 largest firms. In fourth-quarter 1984, by comparison, 16 companies had lower earnings than in the same period the year before.

Part of the problem is that many of the cost controls implemented in the early 1980s have been exploited to their limits. Some Wall Street analysts believe that, short of drastic measures like further employment

Chemical industry leaders for the first quarter

Sales

Rank 1985		$ Millions	Rank 1984
1	Dow Chemical	$2753.0	1
2	Union Carbide	2172.0	2
3	Monsanto	1624.0	3
4	W. R. Grace	1580.0	4
5	PPG Industries	1040.0	5
6	American Cyanamid	959.6	6
7	Celanese	748.0	7
8	Hercules	638.0	8
9	National Distillers	574.2	9
10	Rohm & Haas	552.8	10

Earnings[a]

	$ Millions	Rank 1984
Dow Chemical	$110.0	2
Monsanto	87.0	1
Union Carbide	71.0	3
PPG Industries	70.4	4
American Cyanamid	45.8	5
Rohm & Haas	40.3	6
Hercules	38.6	7
Celanese	36.0	8
Air Products	35.6	10
Morton Thiokol	32.1	14

Profitability

	Earnings as % of sales	Rank 1984
International Flavors	14.5%	1
Freeport-McMoRan	12.0	2
Nalco Chemical	10.7	4
Petrolite	9.1	7
Loctite	7.9	3
Air Products	7.8	8
Lubrizol	7.6	9
Ethyl	7.5	17
International Minerals	7.4	12
Rohm & Haas	7.3	5

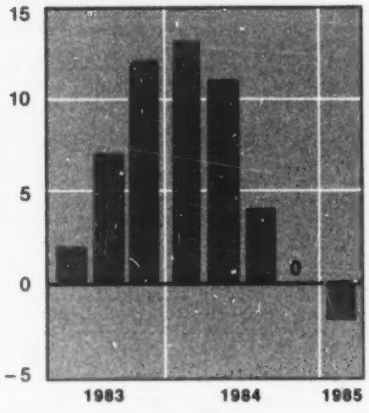
a After taxes. Note: For 30 companies listed on page 10.

Chemical industry 1985 first-quarter results

- Sales slipped 2%
- Earnings plunged 24%
- Profit margins 4.6%
- Production rose just 1.7%
- Prices edged up 1.2%

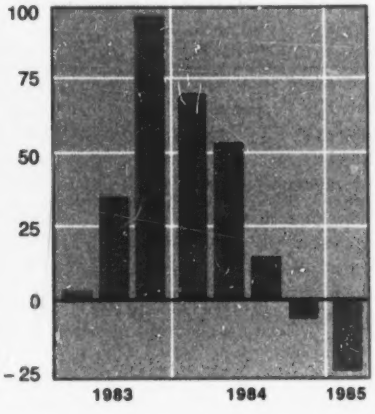
Sales

% change from year-earlier quarter



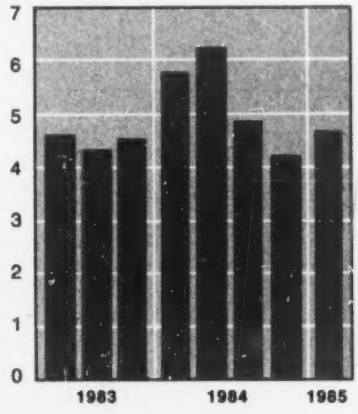
Earnings

% change from year-earlier quarter



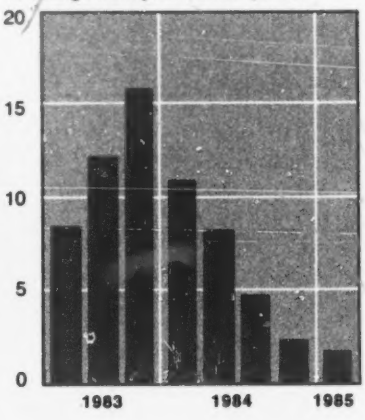
Profit margins

After-tax earnings as % of sales



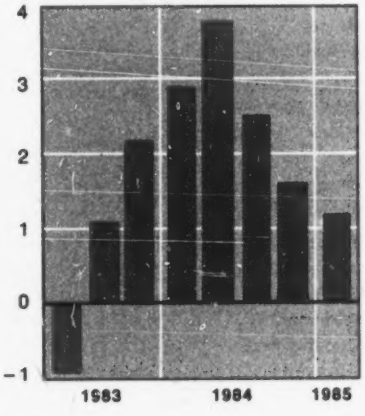
Production

% change from year-earlier quarter



Prices

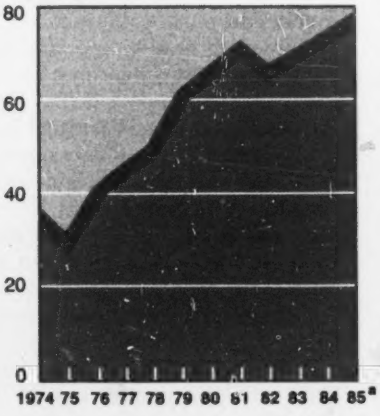
% change from year-earlier quarter



Sales in 1985 will rise 4% and earnings will increase 9%, moving chemical profitability to 5.4%

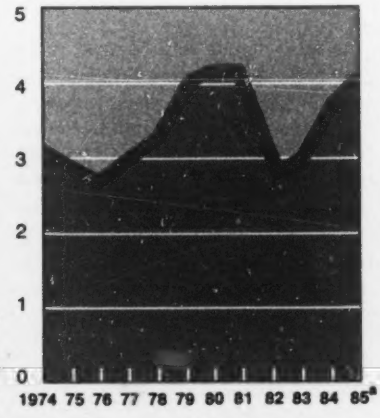
Annual sales

$ Billions



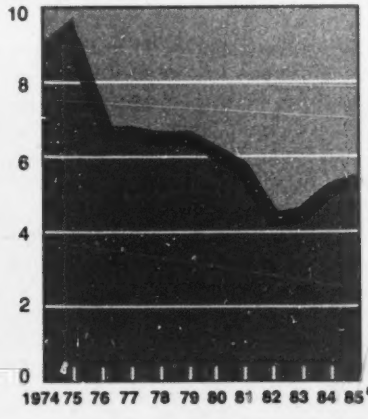
Annual earnings

$ Billions



Annual profit margins

After-tax earnings as % of sales



a C&EN estimates. **Note:** All sales, earnings, and profit-margin data are based on combined results of the 30 companies listed on page 10.

Average earnings for largest chemical producers fell 24% in first quarter

	FIRST-QUARTER 1985						12-MONTH RUNNING DATA			
	Sales	Earnings[a]	Change from 1984		Profit margin[b]		Change from 1984		Profit margin[b]	
	($ millions)		Sales	Earnings	1985	1984	Sales	Earnings	1985	1984
Air Products[c]	$ 457.7	$ 35.6	1%	−3%	7.8%	8.1%	4%	11%	7.8%	7.4%
American Cyanamid[c]	959.6	45.8	2	−19	4.8	6.0	6	0	5.1	5.4
Celanese[c]	7[illegible]	36.0	−11	−18	4.8	5.3	−3	2	4.7	4.5
Chemed	86.[illegible]	4.0	9	−20	4.5	6.1	21	3	5.4	6.4
Chesebrough-Pond's[c]	515.9	18.9	23	1	3.7	4.4	14	2	6.1	6.9
Crompton & Knowles	55.7	1.2	−7	−33	2.2	3.0	−4	7	3.2	2.9
Dow Chemical[c]	2,753.0	110.0	−6	−17	4.0	4.5	−1	22	4.2	3.4
Essex Chemical	45.5	2.4	15	25	5.3	4.8	10	168	5.5	2.3
Ethyl	377.4	28.2	−10	14	7.5	5.9	−8	18	8.2	6.4
First Mississippi	68.2	3.9	−5	−18	5.7	6.6	14	74	7.3	4.8
Freeport-McMoRan	214.6	25.7	6	16	12.0	10.9	9	7	11.8	12.0
H. B. Fuller	108.6	1.8	4	−17	1.6	2.0	5	−6	2.8	3.2
W. R. Grace[c]	1,580.0	−4.3	6	def	def	2.3	7	−8	2.1	2.5
Hercules[c]	638.0	38.6	3	−19	6.1	7.7	3	13	7.4	6.8
International Flavors	121.3	17.6	−2	−6	14.5	15.2	2	−1	14.4	14.9
International Minerals[c]	413.3	30.7	7	15	7.4	6.9	9	9	6.1	6.1
Loctite	54.0	4.3	−14	−35	7.9	10.5	0	−2	10.0	10.2
Lubrizol	255.6	19.4	20	15	7.6	8.0	8	10	7.9	7.7
Monsanto[c]	1,624.0	87.0	−6	−50	5.4	10.1	1	−21	5.3	6.8
Morton Thiokol[c]	496.9	32.1	4	28	6.5	5.3	3	1	6.2	6.3
Nalco Chemical	164.2	17.6	−1	2	10.7	10.4	1	2	10.6	10.5
National Distillers[c]	574.2	20.5	−3	−46	3.6	6.4	−8	−31	2.5	3.3
Olin[c]	540.3	15.6	3	−43	2.9	5.2	5	1	3.7	3.8
Pennwalt	261.4	6.7	2	−29	2.6	[illegible].7	6	−1	4.5	4.8
Petrolite	77.5	7.1	7	18	9.1	8.2	4	24	9.0	7.5
PPG Industries[c]	1,040.0	70.4	0	−5	6.8	7.1	10	14	7.4	7.1
Reichhold Chemicals	185.1	2.5	−12	−55	1.3	2.6	0	−2	2.9	3.0
Rohm & Haas[c]	552.8	40.3	1	−28	7.3	10.3	4	−5	7.6	8.4
Union Carbide[c]	2,172.0	71.0	−9	−34	3.3	4.5	1	8	3.6	3.3
Witco Chemical	365.1	11.0	0	−25	3.0	4.0	5	3	3.9	3.9
Total 15 largest companies	**$15,065.7**	**$648.1**	**−2%**	**−28%**	**4.3%**	**5.8%**	**3%**	**2%**	**4.7%**	**4.8%**
Second 15 companies	**$ 2,442.8**	**$153.3**	**0%**	**−3%**	**6.3%**	**6.4%**	**3%**	**9%**	**7.0%**	**6.6%**
GRAND TOTAL	**$17,508.5**	**$801.4**	**−2%**	**−24%**	**4.6%**	**5.9%**	**3%**	**3%**	**5.1%**	**5.0%**

a Excludes all significant extraordinary and nonrecurring items. b After-tax income as a percentage of sales. c One of 15 largest firms. def = deficit.

Ground rules for C&EN earnings analysis

C&EN's quarterly report on financial performance of the U.S. chemical industry contains data from the 30 largest U.S. basic chemical companies and from 41 oil and diversified companies, each with more than $200 million in annual chemical sales.

To be included in the table of basic chemical producers, a company must have at least 40% of its sales in chemicals, and its chemical operations must be the largest single portion of the company's operations. That is why Du Pont, for example, is included in the table of diversified manufacturers.

In referring to chemical sales, C&EN means those chemicals whose molecular composition has been changed in the course of manufacture. Hence, chemical sales include those of traditional categories of basic petrochemicals and inorganics, organic intermediates and inorganic compounds, polymers such as plastics and fibers, agricultural chemicals, and specialty derivatives.

In listing earnings, the survey gives after-tax income for continuing operations before nonrecurring items and extraordinary charges. Foreign currency translations are included.

reductions, many chemical producers probably have lowered their breakeven points about as much as possible for now. Some companies are taking drastic measures. Du Pont, for instance, took a $125 million after-tax charge to earnings in the first quarter to pay for its latest early retirement program. Some 11,500 employees resigned. And Hercules took a $2.8 million after-tax charge to cover the expenses of an early retirement program aimed at reducing the staff of Hercules Specialty Co.

Some companies found other ways to shore up the bottom line. Dow Chemical, for example, mined a silver lining in the exchange rate cloud. "Excellent currency manage-

ment during the period made a significant contribution to first-quarter performance," says Dow president Paul F. Oreffice. Dow's gain on foreign currency transactions in the first quarter amounted to $33 million, compared with $14 million in the year-earlier period.

Still, none of this is making money from chemicals. That was a tougher row to hoe. The impact of the industry's big problems can be sensed in various statistics (applying to the entire chemicals and allied products sector): Production in first-quarter 1985 was just 1.7% above that in the year-earlier period, by far the smallest increase since the end of the recession in late 1982; and chemical prices rose a mere 1.2%, the smallest year-to-year quarterly gain since the recovery began.

Not surprisingly, therefore, the commentary accompanying earnings statements this quarter is pretty much a litany of a few bright spots and many sore spots. Both Air Products and Union Carbide, for instance, point out the good performance of the industrial gases business in the first quarter. Air Products, for which gases accounted for 57% of sales revenue in the quarter, was aided materially; it got through the period with a 1% gain in sales and a 3% decline in net income. There was less impact on Union Carbide's bottom line; industrial gas sales rose 5% but accounted for just 18% of corporate sales. However, whereas Air Products posted a gain in operating income for industrial gases, Carbide reported an 11% decline in that category.

There were many more sore spots. Producers suffered greatly from their inability to raise prices of low-density and high-density polyethylene. National Distillers & Chemical, for example, recorded a 3% decline in sales and a 46% drop in earnings, principally attributable to depressed polyethylene prices in the company's U.S. Industrial Chemicals unit, comments National Distillers' chairman Drummond C. Bell. And InterNorth's Norchem unit (formerly Northern Petrochemical) turned in a $2.1 million loss for tne quarter. Reason: lower LDPE and linear LDPE prices.

Other polymers were in trouble, too. For Celanese, earnings of the fibers group (the company's largest product group) dropped 29% because of such factors as lower export prices for smoking products and soft demand for acetate filament and polyester staple. Monsanto's operating earnings for its fibers and intermediates unit fell 86%, and those for polymer products fell 53%, both before taxes. As for Du Pont, after-tax operating income fell 52% for fibers and 20% for polymer products.

Industrial chemicals gave even less help to earnings. Du Pont's agricultural and industrial chemicals segment recorded a 55% earnings decline, and Celanese's chemical

Earnings for energy and diversified firms fell 15%

	% chemical sales	FIRST-QUARTER 1985 Sales ($ millions)	Earnings[a] ($ millions)	Change from 1984 Sales	Change from 1984 Earnings	Profit margin[b] 1985	Profit margin[b] 1984
OIL AND GAS COMPANIES							
American Petrofina	15%	$ 566.1	$ −2.7	3%	def	def	1.9%
Amoco[c]	10	7,000.0	473.0	−7	−20%	6.8%	7.9
Ashland Oil	14	1,800.0	14.1	−10	182	0.8	0.3
Atlantic Richfield	10	5,819.0	352.0	−10	−15	6.0	6.3
Chevron	4	12,600.0	354.0	73	−6	2.8	5.2
Diamond Shamrock	21	954.7	59.1	−16	−1	6.2	5.2
Exxon	7	23,099.0	1325.0	−7	−10	5.7	5.9
InterNorth	5	2,900.1	113.9	76	−15	3.9	8.2
Kerr-McGee	13	809.3	28.4	−10	−29	3.5	4.5
Mobil	4	15,363.0	320.0	2	−16	2.1	2.5
Occidental Petroleum	7	3,700.0	16.3	−5	−85	0.4	2.7
Phillips Petroleum	15	4,020.0	120.0	2	−38	3.0	4.9
Shell Oil	16	4,743.0	296.0	−4	−9	6.2	6.6
Standard Oil (Ohio)	5	3,198.0	343.0	10	−10	10.7	13.2
Sun Co.	3	3,670.0	127.0	−13	−11	3.5	3.4
Tenneco	7	3,719.0	63.0	−4	−59	1.7	4.0
Texaco	2	12,000.0	320.0	11	0	2.7	3.0
Unocal (Union Oil)	10	2,800.0	180.7	4	0	6.5	6.7
DIVERSIFIED MANUFACTURERS							
Allied	22	2,800.0	134.0	0	1	4.8	4.8
Aluminum Co. of America	4	1,313.9	6.7	−11	−92	0.5	5.6
Borden	28	1,077.4	34.8	−2	3	3.2	3.1
Borg-Warner	21	939.3	44.6	−1	−11	4.7	5.3
Du Pont	32	8,259.0	221.0	−11	−41	2.7	4.0
Eastman Kodak	21	2,127.1	115.2	−1	−27	5.4	7.4
Engelhard	23	575.2	11.7	−11	def	2.0	def
FMC	39	755.8	44.0	−14	−8	5.8	5.4
General Electric	7	6,200.0	511.0	−6	5	8.2	7.4
Georgia-Pacific	10	1,580.0	49.0	6	14	3.1	2.9
B. F. Goodrich	35	798.7	2.3	−7	−77	0.3	1.2
Kaiser Aluminum	18	816.6	−18.5	17	def	def	2.7
Koppers	45	353.7	−13.0	2	def	def	def
Eli Lilly	23	908.8	160.9	2	10	17.7	16.4
3M	15	1,906.0	164.0	2	−6	8.6	9.3
Merck	17	856.3	131.5	1	5	15.4	14.7
NL Industries	35	327.4	4.4	4	422	1.3	0.3
Pfizer	10	945.7	147.3	3	15	15.6	13.9
Tyler	33	219.3	1.8	1	−54	0.8	1.8
Uniroyal	28	508.0	21.0	0	5	4.1	3.9
U.S Steel	6	4,500.0	−13.0	−6	def	def	0.6
Upjohn	13	545.5	51.6	−3	−21	9.5	11.5
Vulcan Materials	26	203.5	5.0	1	−26	2.5	3.3

a From continuing operations excluding nonrecurring and extraordinary items. b Earnings as a percentage of sales. c Formerly Standard Oil (Ind.). def = deficit.

product group earnings dropped 38%. Monsanto's industrial chemicals operating income fell 67%. Both Olin and PPG Industries say their industrial chemicals earnings were well below those in the year-earlier quarter, and Union Carbide recorded a 40% decline in operating profit for its petrochemicals segment.

Lower earnings were reported for fertilizer operations, too. For example, W. R. Grace's agricultural chemicals operations produced a $4.8 million loss in the first quarter, caused by lower prices for phosphate fertilizers. International Minerals & Chemical, one of the few companies to have higher earnings for the quarter, was hurt by pricing for potash and phosphate products.

Participating in widespread agriculture problems, even herbicides earnings were down in general. Operating income of Monsanto's agricultural products unit fell 21%. Chief executive Richard J. Mahoney says that first-quarter Roundup herbicide shipments in the U.S. were below earlier expectations because distributors were expecting farmers to delay discretionary uses of Monsanto's biggest money-maker.

Morton Thiokol shut down its Weeks Island, La., herbicide plant, where a history of inadequate profitability was capped by the cutoff of supplies of methyl isocyanate—an ingredient in Morton Thiokol's product—when Union Carbide temporarily shut down its Institute, W.Va., MIC unit following the disaster in Bhopal, India, involving that chemical. "The future uncertainties associated with obtaining and transporting the MIC to Weeks Island do not warrant continued production of the herbicide," Morton Thiokol says.

Rohm & Haas, on the other hand, posted a 10% increase in net income for its agricultural chemicals segment. The company cites strong preseason shipments of two of its herbicides as the reason.

Generally dissatisfied with their companies' performance in the first quarter, chief executives are expressing little more than muted confidence about the rest of the year. They are concerned over the direction in which the overall economy is heading, and generally expect that full-year 1985 earnings will not increase so much as 1984 earnings did. Still, most executives believe their firms' performance will improve over the first quarter in coming periods this year.

Forecasts for the rest of the year are correspondingly moderate. "IMC has previously forecast an increase of 5 to 10% in net earnings for fiscal 1985 over 1984," says president George D. Kennedy. "Given a reasonable spring fertilizer season and some firming of prices, a result on the low side of that range appears likely." Grace expects the first quarter to be the low point of the year, and at Olin, chairman John M. Henske expects "overall performance for the year to be below that of 1984."

Similarly, PPG chairman Vincent A. Sarni says, "For the remainder of the year, because of a slowing in some of our key markets—particularly chemicals—improving on our 1984 level of performance will be a real challenge." □

Energy companies' chemical earnings fell, too

Oil and gas producers, already wounded by the poor conditions of the petroleum marketplace, found no balm in the performance of their chemical operations in the first quarter. After-tax earnings for the chemical segments of seven oil companies that break out such data fell across the board a composite total of 43% compared with the first quarter of 1984.

Most chemical products marketed by the major oil firms are commodity petrochemicals, which have been most affected by the stagnation that has characterized much of the chemical pricing structure for more than a year. In their explanations for the chemical segments' poor results, in fact, energy company chief executives point almost uniformly to slimmer margins and the effects of the strong dollar as the chief causes of the decline.

"Depressed margins, particularly in commodity petrochemicals, reduced U.S. earnings," says Clifton C. Garvin Jr., chairman of Exxon, which has the largest chemical sales among energy companies. "Foreign earnings were down $23 million, as the effect of lower margins was only partially offset by slightly higher sales volumes and a gain from the sale of a fertilizer facility in Europe."

Amoco notes that lower margins more than countered the positive impact of increased sales volume in most product lines, and Shell says the principal factor in its chemical earnings decline was lower refined product selling prices.

"Earnings from chemical operations were affected by the strong U.S. dollar, which depressed export volumes and increased imports in [first-quarter] 1985," says William F. Kieschnick, president of Atlantic Richfield. "Profit margins were generally lower, reflecting increased competition."

Mobil blames startup expenses for its petrochemical plant in Saudi Arabia as the primary cause for the loss registered by its chemical segment in the first quarter. Earnings in the U.S. were essentially unchanged, Mobil says, because lower petrochemical margins were largely offset by improved profits in the company's plastics businesses. InterNorth's Norchem unit, which also recorded a loss, pins the blame on lower prices for low-density and linear low-density polyethylene.

Chevron, citing increased sales of agricultural chemicals and fertilizers, reported an increase in chemical segment earnings to $20 million from $7 million last year. But this year's figure includes results of the Gulf operations acquired last year, whereas the first-quarter 1984 figure does not. Factoring in Gulf's $49 million in chemical earnings for first-quarter 1984 means Chevron's chemical segment earnings actually declined 64% in the first quarter of 1985.

	First-quarter earnings on chemical operations[a]		
$ Millions	1985	1984	% change
Amoco[b]	$49.0	$ 59.0	−17%
Atlantic Richfield	15.0	17.0	−12
Chevron	20.0	56.0[c]	−64
Exxon	80.0	121.0	−34
InterNorth	−2.1	5.3	def
Mobil	−7.0	13.0	def
Shell	13.0	21.0	−38

a After-tax earnings. b Formerly Standard Oil (Ind.). c Restated to include Gulf first-quarter 1984 results. def = deficit.